

# The quality and safety of locum doctors: a narrative review

Jane Ferguson  and Kieran Walshe

Alliance Manchester Business School, The University of Manchester, Manchester M15 6PB, UK

**Corresponding author:** Jane Ferguson. Email: jane.ferguson@manchester.ac.uk

## Summary

Locum doctors are often perceived to present greater risks of causing harm to patients than permanent doctors. After eligibility and quality assessment, eight empirical and 34 non-empirical papers were included in a narrative synthesis to establish what was known about the quality and safety of locum medical practice. Empirical literature was limited and weak methodologically. Locums enabled healthcare organisations to maintain appropriate staffing levels and allowed staffing flexibility, but they also gave rise to concerns about continuity of care, patient safety, team function and cost. There was some evidence to suggest that the way locum doctors are recruited, employed and used by organisations, may result in a higher risk of harm to patients. A better understanding of the quality and safety of locum working is needed to improve the use of locum doctors and the quality and safety of patient care that they provide.

## Keywords

Medical careers, professional conduct and regulation, medical error/patient safety

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## Introduction

The number of temporary workers in the medical profession is rising and this trend looks set to continue.<sup>1–4</sup> Locum doctors are essential for maintaining continuity of service, and healthcare organisations use locums to cover gaps in rotas due to absence or recruitment and retention problems and also to fill service gaps in remote and rural areas. The exponential growth in the use of locum doctors in recent years has been previously related to shortages of medical staff and crises in the healthcare workforce. Shortages have been related to a number of factors including a national lack of responsibility for workforce issues and workforce planning and high numbers of doctors leaving their jobs early.<sup>5</sup> Rising locum numbers and the associated increase in cost has led to a growing

concern among policymakers, employers and professional associations about locum use.<sup>6–8</sup>

Locums are sometimes perceived to present a greater risk of causing harm to patients than permanent doctors. Some high-profile locum failures in practice over recent years<sup>9</sup> have brought into question the quality and safety of locum doctors. The presence of locums in the work environment has been described as an ‘error producing condition’,<sup>10</sup> which is attributed in part to their lack of familiarity with local teams, processes, guidelines and practices.<sup>11–13</sup> The peripatetic nature of locum work is thought to present a risk in and of itself as locum doctors are less likely to be enveloped in regulatory practices and receive less oversight from supervisors and employing organisations.<sup>4</sup> Furthermore, recent data from the General Medical Council show that locum doctors are more likely to be the subject of complaints, more likely to have those complaints subsequently investigated and more likely to receive sanctions.<sup>4</sup> However, the reasons behind these risks and complaints are not well understood and the General Medical Council has acknowledged that information about locum doctors is lacking.<sup>4</sup>

Locum doctors are subject to the same standards and regulations as other doctors. Yet, despite guidelines and policies being issued by UK regulators and organisations relating to locum regulation, employment and practice,<sup>14</sup> recent evidence has highlighted weaknesses in the oversight of locum doctors<sup>15,16</sup> and suggests that these policies may not be fully implemented.<sup>17</sup> The use of locum doctors has continued to be seen as a ‘weak link’ in the chain of clinical governance.<sup>17</sup> The presence of these gaps in the system can lead to organisational blind spots.<sup>18</sup> Identifying these blind spots in governance, and potential solutions, is likely to lead to improvements in patient safety and has been identified as priority by NHS England.<sup>19</sup>

With current projections indicating that the number of doctors working as locums will continue

to rise,<sup>4</sup> it is clear that a better understanding of the quality and safety of locum doctor working is needed to improve the use of locum doctors and the quality and safety of patient care that they provide. This paper presents a narrative review of the evidence relating to the quality and safety of locum medical practice. Its purpose is to develop our understanding of how temporary working in the medical profession might impact on quality and safety and to help formulate recommendations for practice, policy and research priorities.

## Methods

A systematic search of electronic databases (Ovid Medline, PsycINFO, Cochrane Database of Systematic Reviews and the Health Management Information Consortium) was conducted in April 2018 including citation searching and manual reference list screening. The wider literature was searched using Google Scholar and we searched a range of websites for relevant reports, such as The King's Fund, the Department of Health, the General Medical Council, Grey Literature Report and OpenGrey. Documents were also gathered through experts and contacts in the UK and internationally, including leading practitioners in the medical profession and senior officials with responsibility for the regulation and governance of the medical profession.

Our search strategy was purposefully broad in order to identify both the empirical literature and wider literature relating to locum quality and safety. Papers eligible for inclusion in the review were written in English and provided information or evidence relating to the quality and safety of locum doctors. Given that there have been longstanding concerns about locum doctors, no date restrictions were imposed on the search (e.g. Ovid Medline 1946 – April 2018, PsychInfo 1806 – April 2018).

Paper titles were screened by one of the authors (JF) and potentially relevant papers were obtained in full. Full-text empirical papers that met the inclusion criteria were assessed for eligibility and methodological quality using the relevant Critical Appraisal Skills Programme checklists<sup>20</sup> dependent on the study methodology. Non-empirical papers were not formally assessed for quality.

The empirical and non-empirical literatures were synthesised separately. For empirical papers, data on study location, objectives, sample characteristics, methods, findings and methodological quality were extracted in tabular form (Table 1). For non-empirical papers, the title, publisher, author, date of publication, country and document type were

reported, as well as a short summary of their key points on locum quality and safety (Table 2). A narrative approach to synthesis was used because the few empirical papers were heterogeneous in methods, settings and outcomes.<sup>21</sup>

## Findings

### Search results

Database searching identified 461 papers; a further 84 papers were identified from other sources. Following removal of duplicates, 448 remaining papers were screened and 404 were excluded at title/abstract level. Two empirical papers were excluded because of methodological weaknesses. This left a total of 42 papers (eight empirical papers and 34 non-empirical papers) for the review. We did not find any existing review papers on locum doctor working. Figure 1 highlights the stages of paper selection and review.

### *Empirical findings on the quality and safety of locum medical care*

The eight empirical papers identified are summarised in Table 1. Almost all are relatively small studies using surveys or interviews to explore various aspects of locum doctor practice. Often they have small sample sizes, low response rates and other methodological limitations.

The most substantial study we identified compared 30-day mortality, costs of care, length of stay and 30-day readmissions in the United States for a random sample of 1,818,873 Medicare patients treated by locums or by permanent doctors between 2009 and 2014. There were no significant differences in 30-day mortality rates between patients treated by locums compared to permanent doctors; however, cost of care and length of stay were significantly higher when patients were treated by locums. Furthermore, in subgroup analyses, significantly higher mortality was associated with treatment by locums when patients were admitted to hospitals that used locums infrequently, perhaps due to hospitals being unfamiliar with how to support locums. Only locum doctors who provided 60 days or more of care were included in the analysis, meaning that shorter-term locums, who may have had less opportunity to become familiar with the organisation, may have been excluded.<sup>22</sup>

Other papers examined locum medical practice in settings such as anaesthesia,<sup>23</sup> primary care<sup>24-26</sup> and hospital medicine,<sup>22</sup> and some explored doctors' attitudes to and experience of locum working.<sup>27,28</sup>

**Table 1.** Summary of empirical papers reporting on the quality and safety of locum practice.

Title, authors(s), date published, country	Study method and objective(s)	Results	Comments on study quality
1 GPs' employment of locum doctors and satisfaction with their service, Morgan et al., 2000, UK <sup>24</sup>	Questionnaire to examine use of locum doctors by GPs including ease of recruitment and satisfaction with their services.	19.5% (149/764) of practices who had employed a locum reported dissatisfaction. Recruiting locums through agencies was more likely to be associated with dissatisfaction than recruiting locums through word of mouth. Respondents reported dissatisfaction with the limited choice of suitable locum doctors available, general attitude, approach to the job, inappropriate prescribing and referrals, and being 'out of date'.	No information about the validity and reliability of the questionnaire and limited information about piloting and question format. The response rate was high at 80.6% (935/1160 practices); however, potential response bias as single-handed GPs were less likely to respond.
2 Out-of-hours palliative care provided by GP co-operatives: availability, content and effect of transferred information, Schweitzer et al., 2009, Netherlands <sup>25</sup>	A retrospective cross-sectional study of all palliative care phone calls made during a one-year period to investigate the transfer of information about palliative care patients to a GP cooperative and the influence of that information on the care provided by the GPs in the cooperative.	The transfer of information about terminally ill patients to GP cooperatives was often inadequate. Consequently, locums working in GP cooperatives were required to provide palliative care in complex situations without adequate information.	A strength of this study was that all available information about all patients for whom a call was made was included in the analysis. However, a limitation was that authors were unable to establish how many times information was transferred for patients for whom no call was made.
3 A site check prior to regional anaesthesia to prevent wrong-sided blocks, Slocombe and Pattullo, 2016, Australia <sup>23</sup>	An audit of regional anaesthesia performed in of the initiative 'stop before you block' – a pre-procedure pause to confirm the correct side of a regional anaesthetic block.	A site check was less frequent if the block was done as an emergency procedure, outside of an operating theatre, or by a locum or visiting anaesthetist. Visiting anaesthetists and locums performed 16 blocks in total of which only three had a SB4YB performed.	Small sample size (197 patients) from a single centre.
4 Assessing clinical support and inter-professional interactions among front-line primary care providers in remote communities in northern Canada: a pilot study, Young and Young, 2016, Canada <sup>26</sup>	A cross-sectional survey of primary care providers to identify issues relating to inter-professional communication, clinical support and patient discharge from hospital.	Nurses reported that in responding to their calls for clinical support or referrals, locums in particular did not understand the context they were working in. This lack of understanding was a cause of delayed discharge from hospital, resulting in prolonged patient monitoring and nurses providing treatment that went beyond their scope of practice.	Low response rate (20/104, 19% of doctors and 44/114, 39% of nurses) threatens the validity of this study. Potential non-response bias.

(continued)

Table 1. Continued.

Title, authors(s), date published, country	Study method and objective(s)	Results	Comments on study quality
5 Understanding doctors' attitudes towards self-disclosure of mental ill health, Cohen et al., 2016, UK <sup>29</sup>	An online questionnaire to investigate doctors' attitudes to disclosing mental illness and the obstacles and enablers to seeking support.	Trainees, staff and associate speciality doctors and locums were most reluctant to disclose mental ill health.	No information about the validity, reliability, piloting or the questionnaire format. Small sample size ~1% (1946) of the UK doctor population. 60% of respondents reported experiencing mental ill health, perhaps suggesting potential non-response bias due to self-selection.
6 Association between treatment by locum tenens internal medicine physicians and 30-day mortality among hospitalized Medicare beneficiaries, Blumenthal et al., 2017, USA <sup>22</sup>	A retrospective cohort analysis of 1,818,873 Medicare beneficiaries hospitalised between 2009 and 2014 to compare quality (including 30-day mortality) and costs of hospital care delivered by locum tenens and non-locum tenens internal medicine doctors.	There was no significant difference in 30-day mortality among patients treated by locum tenens doctors compared with those treated by non-locum tenens doctors (8.83%vs 8.70%). Subgroup analyses indicated that patient mortality was significantly higher when patients were admitted to hospitals that used locums infrequently.	There was no information on factors that could have influenced care quality, for example locum characteristics (including age, training and board certification). Information was also lacking on the induction and support process for hospitals. Only locum doctors who provided 60 days or more of care were included in the analysis, meaning that shorter-term locums may have been overlooked

(continued)

Table 1. Continued.

Title, author(s), date published, country	Study method and objective(s)	Results	Comments on study quality
7 Is innovative workforce planning software the solution to NHS staffing and cost crisis? An exploration of the locum industry, Theodoulou et al., 2018, UK <sup>28</sup>	Documentary analysis of board meetings and Care Quality Commission (CQC) reports and 13 semi-structured interviews with two software experts, two consultants in digital healthcare, the executive director of the trust involved in the study, two specialty managers using the software and six doctors using the app to explore the locum doctor landscape. The aim was to evaluate the implementation of 'People to People Economy' (a smartphone app which acts as an interface facilitating direct communication between doctors looking for locum shifts and hospitals with vacant shifts).	Locum practises are currently highly variable and inefficient. Information exchange was a key element of locum work, yet recruitment practices meant that the transfer of information about locum practise often did not happen. Locums were perceived as safer if they were recruited from a list of known doctors who had been through induction or were on long-term contracts. Locum malpractice at the study site was perceived to be a consequence of organisational inefficiencies as opposed to locum incompetence, e.g. recruitment practices meant that locums were given insufficient information to carry out their duties safely and induction was variable.	Limited information on the analytical process or whether contradictory data were taken into account.
8 Locum physicians' professional ethos: a qualitative interview study from Germany, Salloch et al., 2018, Germany <sup>27</sup>	Eighteen semi-structured qualitative interviews with 13 locum doctors and five permanently employed doctors who were asked for their perspective on the locums' professional behaviour to explore how locums perceive their ethical duties towards patients, colleagues and society.	Permanently employed doctors perceived that locums were a potential risk to patient safety. However, locums regarded themselves as being more patient-centred than permanently employed doctors and better able to promote patient welfare and autonomy due to their role being outside of hierarchical and financial constraints. Locums were regarded as burdensome to the healthcare team in that they needed support with understanding local processes and an unsustainable solution to staffing problems that brought significant quality issues.	The sample of permanent doctors was small and consisted mainly of junior doctors, in comparison to locum participants, who were mostly experienced specialists.

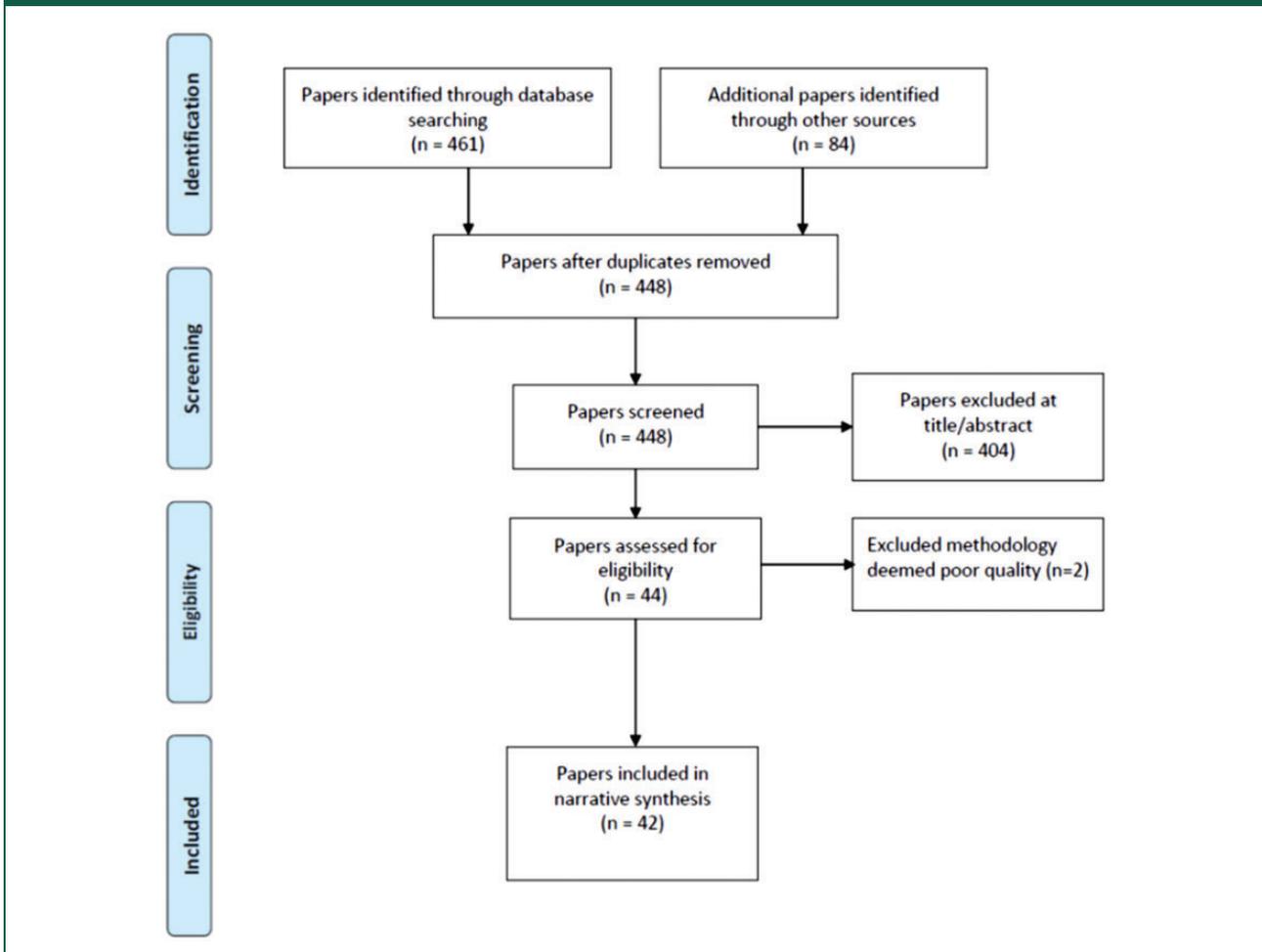
**Table 2.** Factors identified from the non-empirical literature which may affect the quality and safety of locum practice.

Theme	Theme description
Governance and patient safety	Locums are on the fringes of governance. Gaps in the oversight of locums continue to be a patient safety risk, e.g. background checks. The short-term nature of locum work means that locums are less likely to take part in clinical governance activities, such as audits and continuing professional development (CPD).
Policies, procedures and continuity of care	Locums are less likely to be aware of contextual issues and local policies and procedures that are relevant to providing safe and effective care, especially if they do not receive adequate induction and briefing when they take up a locum role in a new/unfamiliar organisation. Locums are not prepared for practice in the same way as permanent staff – for example, inductions are often poor or absent, meaning locums are unable to carry out their duties safely and efficiently. Other risks include not knowing how to escalate concerns and being placed in challenging environments where staffing is an issue. Procedures may be less likely to be carried out when a locum is on duty. The use of locums presents a patient safety issue and may have a negative impact on continuity of care.
Impact on the healthcare team – scope of practice	Locums (particularly short-term locums) can place burden on other members of the healthcare team, such as nurses and junior doctors, who could be expected to perform outside of their scope of practice to compensate for a locum's lack of contextual/local knowledge/competencies.
Impact on the healthcare team – workload	Locum working can increase workload for other members of the healthcare team, for example, extra support for the locum who is unlikely to be familiar with policies and protocols and patients returning to see their regular GP.
Information exchange – patients	The quality and quantity of patient information may be reduced when locums are employed as locums are less likely to be familiar with the patient group and how to report and handover information about patients to other healthcare professionals.
Information exchange – locum practice	The quality and quantity of information exchange about locum doctor practice is poor, meaning that potentially relevant information about locum practice may not be shared with their regulator, employing agency or organisation where they are employed.
Professional isolation and peer support	Locums may become professionally isolated and may be less likely to establish/maintain their professional networks and to have good informal networks of peers to turn to for advice, support or social interaction.
Professional motivation and commitment	Locums' moral purpose and vocational commitment are often called into question and it is suggested that they may be more motivated by financial rewards/incentives than other doctors, and less committed to medicine as a vocation.

Overall, there was some limited empirical evidence to suggest that locums may have a detrimental impact on quality and safety.<sup>22–25,27,28</sup> This was attributed in part to locum doctors being less likely to be familiar with patients and less aware of local policies and processes,<sup>25</sup> which had a number of consequences, including delays in discharging patients<sup>26</sup> and safety procedures being less likely to be carried out.<sup>23</sup> There was some qualitative evidence to suggest

that working with locums was viewed unfavourably by other doctors as their lack of familiarity could be burdensome for other healthcare professionals, who reported having to work outside of their scope of practice in order to compensate for locum unfamiliarity with local contexts.<sup>26</sup> Locum working was sometimes regarded as a problematic solution to staffing problems that had potential quality issues.<sup>27</sup>

Figure 1. PRISMA flow diagram.



### Factors which may affect the quality and safety of locum medical care

Our search identified 34 non-empirical papers. Most were from the UK (24), while four were from the USA, three from Canada and one from the Netherlands. Most papers focused largely on the poor governance or regulation of locum working and the associated risks or problems of quality and safety. Eight recurring themes regarding quality and safety of locum practice were identified and are outlined in Table 2.

Findings from this wider literature (which is summarised in Table A1 in online Appendix 1) indicated that a lack of robust systems around the employment of locum doctors presented a number of potential risks to safety and quality. This was attributed to, for example, inadequate pre-employment checks and induction, unclear line management structures, poor supervision and lack of reporting of

performance.<sup>2,7,11,13,15,30–43</sup> Locums were described as professionally isolated<sup>41</sup> and less likely to be aware of the local context necessary for delivering safe and efficient care.<sup>7,11,32,35,44</sup> This was regarded as not only detrimental to patient safety, but this lack of preparation for practice may also be potentially detrimental to locum wellbeing and the wider healthcare team who might have to work beyond their scope of practice to compensate for the locums' lack of knowledge.<sup>39</sup> Other inefficiencies related to locum working included increased workload for the healthcare team if patients returned to their usual doctor after initially seeing a locum, resulting in duplication and waste of resources.<sup>45</sup> The quality and quantity of information exchange about locum working was described as absent or poor.<sup>31–34,36</sup> Furthermore, inadequate record keeping and reporting may have also meant that poorly performing locums were able to move between organisations without their performance issues being addressed.<sup>30,32,36,44</sup>

## Discussion

This is the first review of the evidence relating to the quality and safety of locum doctors. We have already noted that there have been growing concerns about the quality, safety and cost of locum doctors among policymakers, employers, regulators and professional associations, and that this has led organisations such as NHS Employers<sup>46</sup> and NHS England<sup>42</sup> to produce guidelines for organisations using locums, locum agencies and locums themselves. However, our review suggests that there is relatively little empirical evidence to support assertions about the quality and safety of locum practice, and to provide an evidence base to support the development of such guidelines.

There does seem to be some consensus in the literature that there are a number of factors which plausibly may affect the quality and safety of locum practice, some of which are concerned essentially with locum doctors themselves, but most of which are really about the organisations who use locums and the ways in which they are deployed and supported. While it is clearly reasonable to expect that locum doctors take personal responsibility for their own professional development, and display the same commitment to the medical profession as other doctors, it seems likely that the quality and safety of locum practice is fundamentally shaped by the organisational context in which they work. Our review has highlighted eight key factors (Table 2), six of which pertain to organisational context. It suggests that organisations should ensure that locums are fully included in systems for clinical governance including clinical audit, continuing professional development and appraisal; that policies and procedures should be fit for use by locum doctors as well as permanent staff and should not presume knowledge of or familiarity with local processes; that there should be careful consideration of the scope of practice of locum doctors and their integration into the wider clinical team; and that information flows, handover procedures and communications need to take account of locum working arrangements. Importantly, it suggests that organisations have a responsibility if they have concerns about a locum to deal with them fairly, constructively and properly and to liaise fully with both the locum and the locum agency involved and, if necessary, with the General Medical Council.

The lack of robust evidence about the quality and safety of locum practice is perhaps, in part, because this is a difficult topic to research. Routine sources of data do not generally identify whether care was provided by a locum doctor, and often care is provided by a team which may consist of both locum and permanent doctors and it is difficult to distinguish the separate contributions of each. Indeed, the term

‘locum doctor’ itself may be unhelpful, as it includes everything from those working in permanent positions but undertaking some additional work as a locum to those who work for all or most of their time as a locum, and locum positions which may last as long as several months or more to assignments where a locum may work for as little as a single shift or a few days in an organisation. But it does seem clear that more research is needed to examine empirically the differences that exist between the practice and performance of locum and permanent doctors, to develop our understanding of the factors which influence the quality and safety of locum working, and to provide an evidence base for guidance to healthcare organisations, locum agencies, regulators and, of course, locum doctors themselves.

## Conclusion

Overall, we conclude that there is very limited empirical evidence to support the many commonly held assumptions about the quality and safety of locum practice, or to provide a secure evidence base for the development of guidelines on locum working arrangements. It is clear that future research could contribute to a better understanding of the quality and safety of locum doctors working and could help to find ways to improve the use of locum doctors and the quality and safety of patient care that they provide.

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### ORCID iD

Jane Ferguson  <https://orcid.org/0000-0002-8129-8376>

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